SILICON
CONSULTING ENGINEERS

NO.SC/DC/YNL/2020-21/W7-MM

Date: 18-02-2021

To,
The Executive Engineer,
Yelahanka Division
Bangalore.

"PMC CERTIFICATE AND INSPECTION REPORT"

Dear Sir,

Subject: Regarding Inspection Report for the below mentioned work.

Name of Work: Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura

Item No	Description of work	Unit	Qty	Remarks
1	KSRRB 300-1. Earthwork excavation by manual means for roads, drains & similar works in ordinary soil excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specifications including all lead and lead including loading	Cum	88.713	Work done upto the Billed Quantity and the Quality is Satisfactory
2	KSRRB M300-14. Excavation for roadwork in all types of soil by mechanical means including cutting and loading to tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 6.00 km and complete as per specifications	Cum	582.03	Work done upto the Billed Quantity and the Quality is Satisfactory
3	KSRRB M2100-10. Providing and laying Plain cement concrete of mix 1:3:6 with OPC @ 220kgs, with crushed 40mm and down size graded granite metal coarse aggregates @0.89cum and fine aggregates @ 0.46cum, in foundation mechanically mixed, placed in foundation and compacted by vibration	Cum	36.85	Work done upto the Billed Quantity and the Quality is Satisfactory
4	Providing and laying plain/reinforced cement concrete for side drains using M20 nominal mix concrete with OPC at 300 kgs. with 20mm and down size granite metal coarse aggregates at 0.69 cum and fine aggregates at 0.43 cum machine mixed, well compacted for walls and bottom including centering,	Cum	78.78	Work done upto the Billed Quantity and the Quality is Satisfactory
5	KSRB 4.9.2 : Providing T.M.T steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks	Tn	3.94	Work done upto the Billed Quantity and the Quality is Satisfactory
6	Providing and constructing granite / trap / basalt size stone masonry in foundation with cement mortar & stone hammerd dressed in courses not less than 20 cms high, bond stones at 2m. apart in each course including cost of materials, labour, HOM, curing complete as per specifications including all	Cum	50.23	Work done upto the Billed Quantity and the Quality is Satisfactory
7	Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregtes @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, for	Cum	23.730	Work done upto the Billed Quantity and the Quality is Satisfactory
8	Providing and fixing RCC Precast cover slab of 250mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the	Sqm	10.65	Work done upto the Billed Quantity and the Quality is Satisfactory
9	Providing and laying 100mm thick pre-cast cover slabs over drains of width not exceeding 800 mm using M20 concrete reinforced with steel @ 6.00 kg/Sqm, slabs jointed in CM 1:3 proportion and nicely finished including providing holes in the Cover slabs wherever necessary for easy drainage of	m	623.00	Work done upto the Billed Quantity and the Quality is Satisfactory

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E-mail siliconcivilengineers@gmail.com

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m No	Description of work	Unit	Qty	Remarks
10	Providing and fixing pre cast solid cement concrete kerb stones made out of CC 1:2:4 with top and bottom width 114 and 165 mm respectively, 400mm high and 450mm in length finished with CM 1:3 plastering and finishing cutting including formwork, curing, including cost of materials, labour	Nos	1018.00	Work done upto the Billed Quantity and the Quality is Satisfactory
11	Construction of granular sub-base Grading-V as Sub-base and drainage layer by providing coarse graded crushed stone aggregates of granite/trap/basalt material, mixing by mix in place method by rotavator at OMC,spreading in uniform layers with motor grader on prepared surface and compacting with	Cum	9.15	Work done upto the Billed Quantity and the Quality is Satisfactory
12	KSRRB M400-17. Providing, laying, spreading and compacting cushed stone aggregates of granite / trap / basalt to wet mix macadam specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with	Cum	145.56	Work done upto the Billed Quantity and the Quality is Satisfactory

With respect to the above subject & name of the work, we have inspected the work and the Quantity and Quality of above mentioned items of the work was found to be completed satisfactorily for the 1st and Part bill

Thanking you,

With Regards,

SILICON CONSULTING ENGINEERS

For Silicon Consulting Engineers

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E-mail siliconcivilengineers@gmail.com

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NO SC/QC/YRI/2020-21/W7-MM

Date: 18-02-2021

To,
The Executive Engineer,
RI,Yelahanka Division,
Bangalore.

"FREQUENCY AND QUALITY REPORT"

Dear Sir,

Subject: Regarding Quality Report for the below mentioned work.

Name of Work: Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura

Item No	Description of work	Unit	Qty	No of Samples Tested	Standards
1	KSRRB M2100-10. Providing and laying Plain cement concrete of mix 1:3:6 with OPC @	Cum	36.85	1	Per 100 cum
2	Providing and laying plain/reinforced cement concrete for side drains using M20 nominal	Cum	78.78	4	Per 50 cum
3	KSRB 4.9.2 : Providing T.M.T steel reinforcement for R.C.C work including	Tn	3.94	1	Per each dia
4	Providing and constructing granite / trap / basalt size stone masonry in foundation with	Cum	50.23	1	Per 100 cum
5	Providing and laying in position plain cement concrete of mix 1:2:4 with cement @	Cum	23.73	2	Per 50 cum
6	Providing and fixing pre cast solid cement concrete kerb stones made out of CC 1:2:4	Nos	1018.00	2	Per 500 Nos
7	Construction of granular sub-base Grading-V as Sub-base and drainage layer by providing	Cum	9.15	1	Per 400 cum
8	KSRRB M400-17. Providing, laying, spreading and compacting cushed stone aggregates of	Cum	145.56	1	Per 200 cum

With respect to the above subject & name of the work, we have tested the materials and the Quantity of above mentioned items of the work was found to be completed satisfactorily for the 1st and Part bill

Thanking you,

With Regards,

For Silicon Consulting Engineers

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SC/QC/YRI/2019-20/W7-MM-C1 **Date: 02-12-2020**

1. TEST REPORT ON CEMENT:

Sub: Testing of 53 Grade Cement Sample (IS 12269-1987).
{Project*: Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

PHYSICAL TESTS ON CEMENT

Grade * : 53,
Type * : O.P.C

TABLE 1.1:

SL No	Name of Test	Test Results	Requirements as per IS 8112-1989
1	Initial setting time	**158 min**	Shall not be less than 30 min
2	Final setting time	**265min**	Shall not be more than 600 min
3	Fineness (by dry sieving on IS 90 micron sieve)	**2.11%**	Not to exceed 10.0%
4	Soundness test(by Le-Chatelier's method)	**2.06mm**	Shall not be more than 10 mm
5	Compressive strength a) 3 days (average of three results)	**28.74 N/Sq mm**	Shall not be less than 27 N/Sqmm

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : KV Jairam Rd to Aarav systems

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Assistant Executive Engineer
Road Infrastructure, (Yelahanka Division)
Bruhat Bengaluru Mahanagara Palike
Bangaluru - 92.

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SC/QC/YRI/2019-20/W7-MM-PCC1 **Date: 02-12-2020**

1. TESTING OF COARSE AND FINE AGGREGATES:

Sub Testing of Coarse and Fine aggregates to be used for bed concrete.
{Project*: Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.}
Ref. Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

1. COARSE AGGRGATES TABLE - SIEVE ANALYSIS:

IS Sieve Size, mm	Percentage passing	Requirements as per IS 383-1970 (Reaffirmed on 2007) % Passing	
	40 mm Sample	Single size	Graded
40mm	**100.00**	85-100	90 – 100
20mm	**64.20**	0 -20	30- 70
10mm	**31.80**	0 -5	10- 35
4.75mm	**4.05**	------	0- 5

2. FINE AGGREGATES TABLE - SIEVE ANALYSIS:

IS Sieve Size, mm	Percentage Passing	Specification as Per IS: 383-1970(Reaffirmed 2002) Percentage Passing			Remarks
		Zone-I	Zone-II	Zone -III	
04.75	**96.70**	90-100	90-100	90-100	The Sample Conforms to Grading **Zone-II**
02.36	**82.15**	60-95	75-100	85-100	
01.18	**74.05**	30-70	55-90	75-100	
600.mic	**47.80**	15-34	35-59	60-79	
300.mic	**24.15**	5-20	8-30	12-40	
150.mic	**6.80**	0-10	0-10	0-10	

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Aarav systems to Kempegowda circle Ch:382.50 to 412.50m

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Assistant Executive Engineer
Road Infrastructure, (Yelahanka Division)
Bruhat Bengaluru Mahanagara Palike

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E-mail siliconcivilengineers@gmail.com

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SC/QC/YRI/2019-20/W7-MM-CE1 **Date: 08-12-2020**

1. TEST REPORT ON CEMENT:

Sub. Testing of 53 Grade Cement Sample (IS 12269-1987).
{Project*: Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

PHYSICAL TESTS ON CEMENT

Grade * : 53,
Type * : O.P.C

TABLE 1.1:

SL No	Name of Test	Test Results	Requirements as per IS 8112-1989
1	Initial setting time	**164 min**	Shall not be less than 30 min
2	Final setting time	**270 min**	Shall not be more than 600 min
3	Fineness (by dry sieving on IS 90 micron sieve)	**1.86 %**	Not to exceed 10.0%
4	Soundness test(by Le-Chatelier's method)	**1.94 mm**	Shall not be more than 10 mm
5	Compressive strength a) 3 days (average of three results)	**28.53 N/Sq mm**	Shall not be less than 27 N/Sqmm

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : KV Jairam Rd to Aarav systems Ch:89.00 to 119.00m

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SC/QC/YRI/2019-20/W7-MM-FA1 **Date: 08-12-2020**

1. TESTING OF FINE AGGREGATES :

Sub Testing of Fine Aggregates.
{Project*: Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TABLE - 1.1 : SIEVE ANALYSIS :

IS Sieve Size,mm	Percentage Passing	Specification as Per IS: 383-1970(Reaffirmed 2002) Percentage Passing			Remarks
		Zone-I	Zone-II	Zone -II	
04.75	**95.15**	90-100	90-100	90-100	The Sample Conforms to Grading **Zone-II**
02.36	**82.25**	60-95	75-100	85-100	
01.18	**70.05**	30-70	55-90	75-100	
600. mic	**46.80**	15.34	35-59	60-79	
300.mic	**22.45**	5-20	8-30	12-40	
150.mic	**7.30**	0-10	0-10	0-10	

TABLE 1.2 ;

Sl No	Test Conducted	Sample	Results	**Requirements** as Per IS. Specification IS :383-1970 (Reaffirmed 2002)
1	Bulking of Sand	001	**17.66 %**	-----
2	Silt Content	----	**0.59%**	Not more than 8%
3	Specific Gravity	----	**2.61**	-------

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Aarav systems to Kempegowda circle Ch:315.60 to 331.30m

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SC/QC/YRI/2019-20/W7-MM-CA1 **Date: 08-12-2020**

1. TESTING OF COARSE AGGREGATES (20 mm):

Sub Testing of Construction Materials.
{Project* Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.}
Ref. Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

Table - 1.1 : SIEVE ANALYSIS :

IS Sieve Size, mm	Percentage passing	Requirements as per IS 383-1970 (Reaffirmed on 2002) % Passing	
	20 mm Sample	Single size	Graded
40 mm	**100.00**	100.00	100.00
20 mm	**97.25**	85-100	90 - 100
10 mm	**45.90**	0 - 20	25 - 55
4.75 mm	**3.85**	0 - 5	0 - 10

TABLE 1.2 :

SL No	Test conducted	Results	Requirements as per IS:383-1970 & Tests Conforms to IS 2386(Part I to IV) – 1963 (Reaffirmed on 2002)
1	Flakiness Index	**26.362%**	Not to exceed 25 %
2	Crushing value	**28.74%**	Not to exceed 45 % for concrete other than for wearing surfaces and 30% for concrete for wearing surfaces

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : KV Jairam Rd to Aarav systems Ch:60.00 to 80.80m

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SC/QC/YRI/2019-20/W7-MM-SSM1 **Date: 11-12-2020**

LTESTING OF STONE SAMPLE :

Sub: Testing of Size stone

{Project*: Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.}

Ref. Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

Technical Reference: IS 1121(Part 1) -1974 (R.A on 1998)

Table 1.1 :

SL No	Details of Tests	Observed Value	Normal Values
01	Compressive Strength	**1375.00** Kg/ Sqcm	Not less than 1000.00 Kg/Sqcm
02	Water absorption,%	**0.42 %**	Not more than 2.0 %

The result of the materials tested meets the standards and hence can be used for the work.

Sample Collected Site : LHS from Kempegowda circle Ch:66.20 to 96.20m

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Road Infrastructure, (Yelahanka Division)
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SC/QC/YRI/2019-20/W7-MM-S1

Date: 17-12-2020

I. TEST REPORT ON REINFORCEMENT STEEL:

Sub Testing of Reinforcement Steel of diameter 10 mm **TMT Steel.**
{Project* Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura }
Ref. Material testing/PMC/20-21,
Report Required for. Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TABLE – 1

SL No	Details	For 10 mm	
		Test Results	Min Req. as per IS 1786-2008
01	Observed diameter of bar	**10.0 mm**	10.0 mm
02	Observed Wt/m Length **Kg/m**	**0.623**	0.567
03	Proof stress/Yield stress, fy , **N/mm²**	**546.0**	500.0
04	Bend/ Re bend Test	**Ok**	---
05	Percentage of Elongation, %	**20.75**	16.00
06	Ultimate Tensile Strength **N/mm²**	**628.0**	565.0

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : KV Jairam Rd to Aarav systems

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Assistant Executive Engineer
Road Infrastructure, (Yelahanka Division)
Bruhat Bengaluru Mahanagara Palike
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SC/QC/YR1/2019-20/W7-MM-CB1 Date: 28-12-2020

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub Testing of Concrete Cubes (for 07days Compressive Strength).
{Project* Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.}
Ref. Material testing/PMC/20-21.
Report Required for Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm
Grade of Concrete* : M_{15}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	21-12-20	28-12-20	07	22500	300	13.33	**13.41**
	002	"	"	"	"	295	13.11	
	003	"	"	"	"	310	13.78	

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : LHS from Kempegowda circle Ch:96.20 to 115.60m

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Assistant Executive Engineer
Road Infrastructure (Yelahanka Division)
Bruhat Bengaluru Mahanagara Palike
Bengaluru - 92.

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SC/QC/A RI/2019-20/W7-MM-CB1A **Date: 18-01-2021**

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.}
Ref. Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{15}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	21-12-20	18-01-21	28	22500	415	18.44	**18.44**
	002	"	"	"	"	425	18.89	
	003	"	"	"	"	405	18.00	

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : LHS from Kempegowda circle Ch:96.20 to 115.60m

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Page No. 1/1,

Assistant Executive Engineer
Road Infrastructure (Yelahanka Division)
BBMP, Mayura Palike

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SC/QC/YRI/2019-20/W7-MM-CB2 **Date: 31-12-2020**

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	24-12-20	31-12-20	07	22500	300	13.33	**13.41**
	002	"	"	"	"	295	13.11	
	003	"	"	"	"	310	13.78	

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : KV Jairam Rd to Aarav systems Ch:166.20 to 178.90m

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Page No. 1/1,

Assistant Executive Engineer
Road Infrastructure, (Yelahanka Division)
Bruhat Bengaluru Mahanagara Palike
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SC/QC/YRI/2019-20/W7-MM-CB3 Date: 04-01-2021

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub Testing of Concrete Cubes (for 07days Compressive Strength)
[Project* Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura]
Ref. Material testing/PMC/20-21.
Report Required for Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor* M/s KRIDL, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm
Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	28-12-20	04-01-21	07	22500	300	13.33	13.41
	002	"	"	"	"	295	13.11	
	003	"	"	"	"	310	13.78	

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Aarav systems to Kempegowda circle Ch:279.20 to 297.00m

SILICON CONSULTING ENGINEERS

Assistant Executive Engineer
Road Infrastructure (Yelahanka Division)
BBMP

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E-mail siliconcivilengineers@gmail.com

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SC/QC/YRI/2019-20/W7-MM-CB2A

Date: 21-01-2021

I. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub Testing of Concrete Cubes (for 28days Compressive Strength).

(Project* Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.)

Ref. Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	24-12-20	21-01-21	28	22500	415	18.44	**18.44**
	002	"	"	"	"	425	18.89	
	003	"	"	"	"	405	18.00	

The result of the materials tested meets the standards and hence can be used for the work.

Sample Collected Site : KV Jairam Rd to Aarav systems Ch:166.20 to 178.90m

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Road Infrastructure, (Yelahanka Division)
Bruhat Bengaluru Mahanagara Palike
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SC/QC/RI/2019-20/W7-MM-CB3A

Date: 25-01-2021

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.}
Ref. Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	28-12-20	25-01-21	28	22500	415	18.44	**18.44**
	002	"	"	"	"	425	18.89	
	003	"	"	"	"	405	18.00	

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Aarav systems to Kempegowda circle Ch:279.20 to 297.00m

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Assistant Executive Engineer
Road Infrastructure
Bangalore

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SC/QC/YRI/2019-20/W7-MM-KS1 **Date: 11-01-2021**

TEST REPORT

Sub: Testing of Pre-cast Material-Kerb Stones.
{Project*: Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

1. PHYSICAL TESTS ON KERB STONES :

Sl No.	Identification	Flexural strength, fcr in N/sqmm	Characteristic Compressive Strength, fck in N/sqmm	Avg. Characteristic. Compressive Strength fck in N/sqmm	Remarks
1	001	3.38	23.45	**23.22**	As per Cl. 6.2.2 of IS 456- 2000, fcr=0.7√ fck
2	002	3.35	22.95		
3	003	3.37	23.30		

2. WATER ABSORPTION TEST

Sl No	Identification	Water absorption %	Average value %
1	001	4.38	**4.46**
2	002	4.46	
3	003	4.55	

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Aarav systems to Kempegowda circle Ch:404.20m to 434.20m

Assistant Executive Engineer
Road Infrastructure, (Yelahanka Division)
Bruhat Bengaluru Mahanagara Palike
Bengaluru - 02.

SILICON CONSULTING ENGINEERS

#S1317, 4th CROSS BEL 2nd STAGE BHARATH NAGAR ,BANGALORE – 560 091. CELL : 9448353883
E-mail siliconcivilengineers@gmail.com

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SC/QC/VRI/2019-20/W7-MM-KS2 Date: 16-01-2021

TEST REPORT

Sub: Testing of Pre-cast Material-Kerb Stones.
{Project*: Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

1. PHYSICAL TESTS ON KERB STONES :

Sl No.	Identification	Flexural strength, fcr in N/sqmm	Characteristic Compressive Strength, fck in N/sqmm	Avg. Characteristic. Compressive Strength fck in N/sqmm	Remarks
1	001	3.38	23.40	**23.13**	As per Cl. 6.2.2 of IS 456- 2000, fcr=0.7√ fck
2	002	3.34	22.90		
3	003	3.36	23.10		

2. WATER ABSORPTION TEST

Sl No	Identification	Water absorption %	Average value %
1	001	4.56	**4.55**
2	002	4.49	
3	003	4.62	

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : KV Jairam Rd to Aarav systems Ch:30.00 to 60.00m

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Assistant Executive Engineer
Road Infrastructure, (Yelahanka Division)
Bruhat Bengaluru Mahanagara Palike
Bengaluru - 02.

#S1317, 4th CROSS BEL 2nd STAGE BHARATH NAGAR ,BANGALORE – 560 091. CELL : 9448353883
E-mail siliconcivilengineers@gmail.com

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SC/QC/YR1/2019-20/W7-MM-GSB1 Date: 02-02-2021

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
(Project*: Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.)
Ref. Material testing/PMC/20-21.
Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

1. **Gradation Test:**
TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, V Revision-2013
75.00	**100.00**	100
53.00	**96.45**	80-100
26.50	**72.60**	55-90
9.50	**51.15**	35-65
4.75	**41.05**	25-50
2.36	**17.25**	10-20
0.85	**8.50**	2-10
0.425	**3.05**	0-5

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Jakkur road Ch:208.50 to 223.10m

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Assistant Executive Engineer
Road Infrastructure, (Yelahanka Division)
Bruhat Bengaluru Mahanagara Palike
Bengaluru - 92.

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TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.42 %**	Not more than 2.0 %
2.	Liquid Limit, %	**18.36**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**6.54**	----------
5.	Aggregate Impact Value, %	**28.67**	Not more than 40.00 %

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Assistant Executive Engineer
Road Infrastructure (Vrushabhavathi Division)
Bruhat Bengaluru Mahanagara Palike
Bengaluru - 02.

#S1317, 4th CROSS BEL 2nd STAGE BHARATH NAGAR ,BANGALORE – 560 091. CELL : 9448353883
E-mail siliconcivilengineers@gmail.com

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SC/QC/YRI/2019-20/W7-MM-W1 **Date: 11-02-2021**

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Repair and Improvements to drains Mandi Mariyappa Reddy main road in Mariyannapalya in ward No 07 Byatarayanapura.}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

1. Gradation Test:

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	**100.00**	100
45.00	**96.35**	95-100
26.50	**---**	-
22.40	**73.65**	60-80
11.20	**51.05**	40-60
4.75	**34.90**	25-40
2.36	**22.15**	15-30
0.600	**20.55**	8-22
0.075	**3.85**	0-5

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Aarav systems to Kempegowda circle Ch:315.60 to 331.30m

Assistant Executive Engineer
Road Infrastructure, Yelahanka Division)
Bruhat Bengaluru Mahanagara Palike
Bengaluru - 92.

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#S1317, 4th CROSS BEL 2nd STAGE BHARATH NAGAR ,BANGALORE – 560 091. CELL : 9448353883
E-mail siliconcivilengineers@gmail.com

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TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.06 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**28.54 %**	Not more than 35.0 %
3.	Water absorption, %	**0.43 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

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Assistant Executive Engineer
Road Infrastructure, (Yelahanka Division)
Bruhat Bengaluru Mahanagara Palike
Bengaluru - 92.

#S1317, 4th CROSS BEL 2nd STAGE BHARATH NAGAR ,BANGALORE – 560 091. CELL : 9448353883
E-mail siliconcivilengineers@gmail.com

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